

Appl. No. 10/074,602
Amdt. dated December 21, 2004
Reply to Office Action of October 31, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

Claim 1 (currently amended): A modular fire detection and extinguishing system, comprising:

a detector for detecting a fire within a fire hazard zone;

a trigger electrically coupled to the detector to generate an initiation signal once the detector detects a fire in the fire hazard zone;

a gas generant fire extinguisher electrically coupled to the trigger to receive the initiation signal, the fire extinguisher comprising a housing that stores gas generant and fire suppressant, the gas generant being stored proximate to a bottom end of the housing;

a modular distribution line having one end in fluid communication with the fire extinguisher and the other end connected to a nozzle for dispersing fire suppressant within the fire hazard zone, wherein the modular distribution line comprises a fastener on each end, such that the fasteners allow modular distribution lines to be removably connected to a manifold, the nozzle, and each other by way of a coupler.

Claim 2 (currently amended): The system of claim 1, wherein the gas generant fire extinguisher comprises:

an initiator in communication with the gas generant, ~~the gas generant being stored in one end of the housing;~~ and

an orifice plate within the housing that separates the gas generant from fire suppressant, the orifice plate having an exhaust gas orifice formed therein.

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Claim 3 (original): The system of claim 2, wherein the gas generant fire extinguisher is configured such that gravity maintains substantially constant contact between the fire suppressant and the exhaust gas orifice of the orifice plate.

Claim 4 (original): The system of claim 2, wherein the exhaust gas orifice allows exhaust gas generated by actuation of the gas generant to pass through the orifice plate and suspend fire suppressant within the exhaust gas.

Claim 5 (original): The system of claim 1, further comprising a manifold in fluid communication with the gas generant fire extinguisher to allow a flow of exhaust gas exiting the extinguisher to enter one or more distribution lines to disperse fire suppressant throughout the fire hazard zone.

Claim 6 (original): The system of claim 1, wherein the trigger comprises a first power source, a switch coupled to the power source and the detector, the switch allowing an initiation signal to flow from the power source to the gas generant fire extinguisher when the detector detects a fire.

Claim 7 (original): The system of claim 6, further comprising a second power source positioned proximal to the switch.

Claim 8 (original): The system of claim 7, wherein the first power source is coupled to the second power source such that the second power source remains operable when the first power source fails.

Claim 9 (original): The system of claim 8, wherein the first power source comprises a battery and the second power source comprises a capacitor.

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Claim 10 (original): The system of claim 1, wherein the detector is a linear temperature sensitive cable.

Claim 11 (original): The system of claim 1, wherein the fire suppressant is a dry powdered suppressant.

Claim 12 (original): The system of claim 1, wherein the fire suppressant is a liquid suppressant.

Claim 13 (currently amended): A modular engine compartment fire detection and extinguishing system for vehicles, comprising:

- a detector for detecting a fire within an engine compartment of a vehicle;
- a trigger electrically coupled to the detector to generate an initiation signal once the detector detects a fire in the engine compartment;
- a gas generant fire extinguisher electrically coupled to the trigger to receive the initiation signal, the fire extinguisher comprising a housing that stores gas generant and fire suppressant, the gas generant being stored proximate to a bottom end of the housing;
- a modular distribution line having one end in fluid communication with the fire extinguisher and the other end connected to a nozzle for dispersing fire suppressant within the engine compartment, wherein the modular distribution line comprises a fastener on each end, such that the fasteners allow modular distribution lines to be removably connected to a manifold, the nozzle, and each other by way of a coupler.

Claim 14 (currently amended): The system of claim 13, wherein the gas generant fire extinguisher comprises:

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an initiator in communication with the gas generant, ~~the gas generant being stored in one end of the housing~~; and

an orifice plate within the housing that separates the gas generant from fire suppressant, the orifice plate having an exhaust gas orifice formed therein.

Claim 15 (original): The system of claim 14, wherein the gas generant fire extinguisher is configured such that gravity acts to maintain substantially constant contact between the fire suppressant and the exhaust gas orifice of the orifice plate.

Claim 16 (original): The system of claim 15, wherein the exhaust gas orifice allows exhaust gas generated by actuation of the gas generant to pass through the orifice plate and suspend fire suppressant within the exhaust gas.

Claim 17 (previously amended): The system of claim 13, further comprising a manifold in fluid communication with the gas generant fire extinguisher to allow a flow of exhaust gas exiting the extinguisher to enter one or more distribution lines to disperse fire suppressant throughout the engine compartment.

Claim 18 (original): The system of claim 13, wherein the trigger comprises a first power source, a switch coupled to the power source and the detector, the switch allowing an initiation signal to flow from the power source to the gas generant fire extinguisher when the detector detects a fire.

Claim 19 (original): The system of claim 18, further comprising a second power source positioned proximal to the switch.

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Claim 20 (original): The system of claim 19, wherein the first power source is coupled to the second power source such that the second power source remains operable when the first power source fails.

Claim 21 (original): The system of claim 20, wherein the first power source comprises a battery and the second power source comprises a capacitor.

Claim 22 (cancelled)

Claim 23 (previously amended): The system of claim 13, wherein the detector is a linear temperature sensitive cable.

Claim 24 (original): The system of claim 23, wherein the fire suppressant is a dry powdered suppressant.

Claim 25 (original): The system of claim 23, wherein the fire suppressant is a liquid suppressant.

Claim 26 (original): The system of claim 24, wherein the exhaust gas coats an engine within the engine compartment with the fire suppressant.

Claim 27 (original): The system of claim 26, wherein the system operates independently of other vehicle systems.

Claims 28-35 (withdrawn)